Claims 1-28 (Canceled).

Claim 29 (Original) A method for treating a neural condition, comprising:

implanting an electrode within a patient's skull;

detecting an indication corresponding to a naturally occurring series of discharges transmitted by a neural population within the patient's skull;

transmitting a series of electrical signals from the electrode to the neural population;

for at least some of the electrical signals, controlling each electrical signal to have a target temporal relationship to a corresponding one of the discharges; and

updating a schedule according to which the electrical signals are transmitted based on the detected indications.

Claim 30 (Original) The method of claim 29 wherein detecting an indication includes detecting an indication associated with at least one of a movement disorder, Parkinson's Disease, a pain state, a psychiatric condition and epilepsy.

Claim 31 (Original) The method of claim 29, further comprising selecting at least one of an amplitude, pulse width, frequency, and timing of the electrical signal.

Claim 32 (Original) The method of claim 29 wherein detecting an indication includes detecting a neural discharge.

Claim 33 (Original) The method of claim 29 wherein detecting an indication includes detecting a muscle activity associated with the neural discharge.

Claim 34 (Original) The method of claim 29 wherein controlling each signal and updating a schedule are performed by a computer-readable medium.

Claims 35-47 (Canceled).

Claim 48 (Original) A method for treating a neural condition, comprising:

providing a reference stimulus to a patient; and

transmitting an electromagnetic signal to a target neural population of the patient, wherein the electromagnetic signal has a target temporal relationship to the reference stimulus.

Claim 49 (Original) The method of claim 48 wherein providing a reference stimulus includes providing a reference sensory stimulus.

Claim 50 (Original) The method of claim 48 wherein providing a reference stimulus includes providing a reference sensory stimulus external to the patient.

Claim 51 (Original) The method of claim 48 wherein transmitting an electromagnetic signal includes transmitting an electrical signal from an electrode implanted within the patient.

Claim 52 (Original) The method of claim 48 wherein transmitting an electromagnetic signal includes transmitting an electromagnetic signal that precedes a discharge from the target neural population, the discharge being in response to the reference stimulus.

Claim 53 (Original) The method of claim 48 wherein the electromagnetic signal follows the reference stimulus by a target period of time.

Claim 54 (Original) An apparatus for treating a neural condition, comprising:

a transmitter configured to transmit an electromagnetic signal to a target neural population of a patient; and

a controller operatively coupled to the transmitter, the controller being configured to control transmission of the signal from the transmitter to have a target temporal relationship relative to a reference stimulus delivered to the patient.

Claim 55 (Original) The apparatus of claim 54 wherein the controller is configured to receive an indication of the delivery of the reference stimulus to the patient and control transmission of the signal from the transmitter based at least in part on the indication.

Claim 56 (Original) The apparatus of claim 54 wherein the controller is configured to direct delivery of the reference stimulus to the patient.

Claim 57 (Original) The apparatus of claim 54 wherein the transmitter includes at least one implanted electrode.

Claim 58 (Original) The apparatus of claim 54 wherein the controller is configured to control transmission of the signal from the transmitter to have a target temporal relationship relative to a reference sensory stimulus delivered to the patient.

Claim 59 (Original) The apparatus of claim 54 wherein the controller is configured to control transmission of the signal from the transmitter to have a target temporal relationship relative to a reference sensory stimulus external to the patient.